

# LM Split AV/AH Model Series Air Handler Commercial Water Source Heat Pumps

Engineering  
Submittal  
Sheet



# BOSCH

## Overview and Certifications



- ▶ 2 to 5 Ton Capacities
- ▶ Ultra Compact Cabinet
- ▶ Standard 1/2" Closed Cell Foam Insulation
- ▶ Optional DDC controls (multi-protocol) BACnet, Modbus, N2

## Commercial WSHP Product Portfolio

Product	Water-to-Air							Water-to-Water			
	LM	ES	EP	LV	LM Splits	CA	EC	MC	WT	WW	
Price	\$\$\$	\$\$	\$+	\$	\$\$\$	\$	\$\$	\$\$	\$\$	\$\$	
Model Sizes <6 Ton	007			X	X						
	009			X	X						
	012			X	X		X				
	015			X	X		X				
	018			X	X		X				
	024	X		X	X	X					
	025		X						X		
	030	X		X	X						
	035		X						X		
	036	X		X	X	X					
	041				X						
	042			X	X						
	048	X		X	X	X					
	049		X						X		
	060	X		X	X	X				X	
	070	X		X	X				X		
	071		X						X		
Model Sizes >6 Ton	072							X			
	096							X			
	120							X		X	
	122									X	
	150							X			
	151							X			
	180							X		X	
	181							X			
	210							X		X	
	240							X		X	
	300							X			
	360							X	X	X	
	420									X	
480								X			
600								X			
720								X			
Capacities (WLHP)	EER	14.8 - 20.8	13.2 - 17.5	14.2 - 17.5	12.2 - 14.9	14.1 - 18.2	12.2 - 12.7	13.0 - 16.0	18.6 - 19.0	12.6 - 14.7	12.3 - 13.8
	COP	4.9 - 6.5	3.8 - 5.4	5.0 - 5.8	4.3 - 5.1	4.9 - 6.0	4.3 - 4.6	4.2 - 5.6	5.4 - 5.5	4.2 - 4.7	4.2 - 4.6

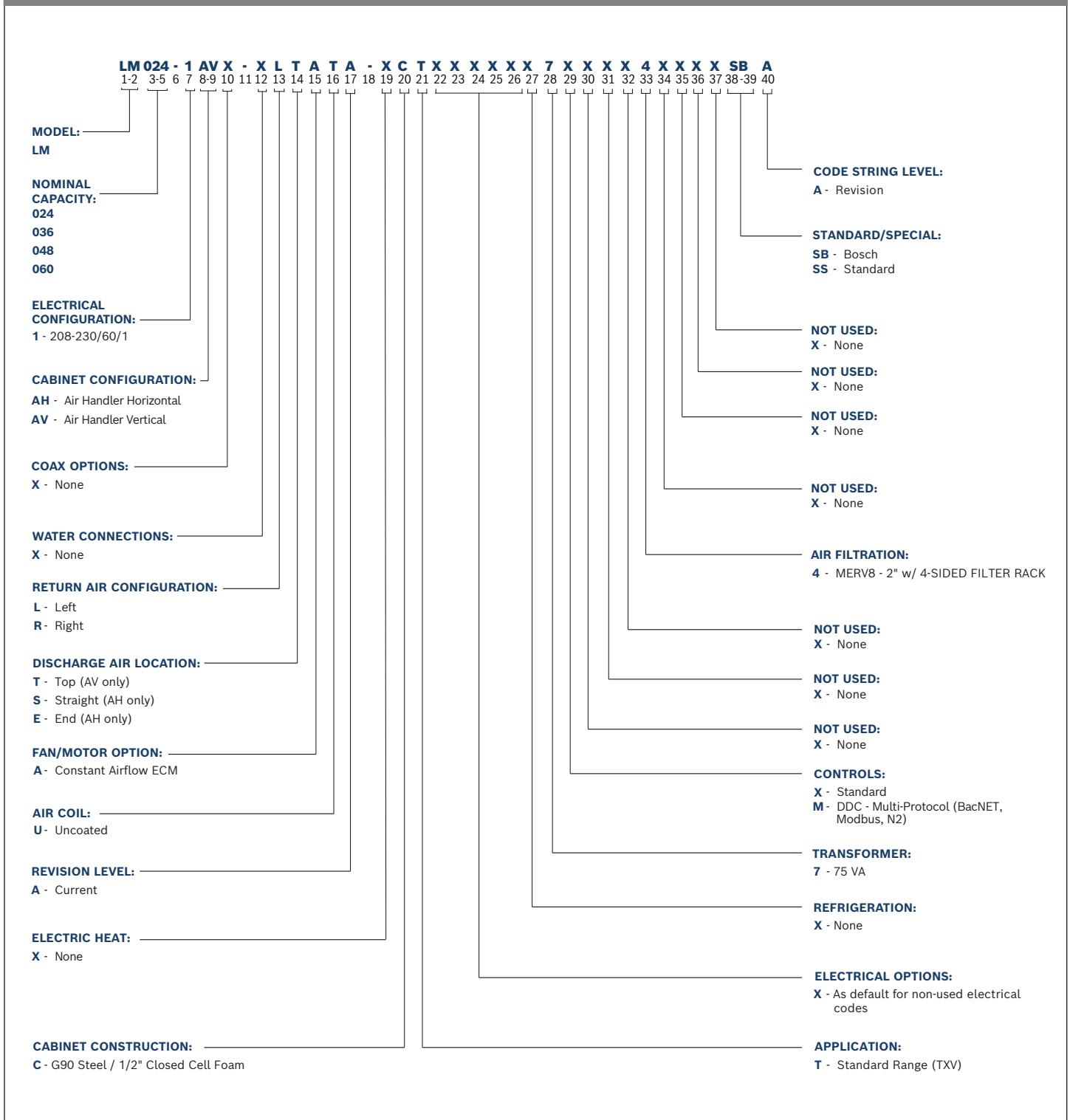
Featured model

# LM Split AV/AH Model Series - Air Handler Commercial Water Source Heat Pumps



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## Air Handler Model Nomenclature



# LM Split AV/AH Model Series - Air Handler Commercial Water Source Heat Pumps



ASHRAE/AHRI/ISO 13256-1 (LM CS + LM AV/AH)															
Model (Condensing Section)	Model (Air Handler)	Load	Fluid Flow GPM	Water Loop Heat Pump				Ground Water Heat Pump				Ground Loop Heat Pump			
				Cooling 86 deg.F		Heating 68 deg.F		Cooling 59 deg.F		Heating 50 deg.F		Cooling 77 deg.F		Heating 32 deg.F	
				Cooling Capacity (Btu/hr)	EER	Heating Capacity (Btu/hr)	COP	Cooling Capacity (Btu/hr)	EER	Heating Capacity (Btu/hr)	COP	Cooling Capacity (Btu/hr)	EER	Heating Capacity (Btu/hr)	COP
LM024-1CS	LM024-1AV/AH	Full	6	23100	15.00	26400	5.20	28500	22.20	22200	4.50	26200	17.00	17700	3.75
		Part	6	17200	16.50	19900	5.50	21600	28.60	16200	4.60	20000	23.80	13800	3.90
LM036-1CS	LM036-1AV	Full	9	36100	14.05	44100	4.85	40900	21.05	35200	4.40	37900	16.25	27400	3.65
	LM036-1AV	Part	9	27000	16.65	32000	5.85	30600	27.65	25250	4.80	29300	23.60	22400	4.25
	LM036-1AH	Full	9	36100	14.85	44100	5.00	40900	22.20	35200	4.50	37900	17.15	27400	3.80
	LM036-1AH	Part	9	27000	15.85	32000	6.00	30600	27.00	25250	4.95	29300	22.90	22400	4.35
LM048-1CS	LM048-1AV	Full	12	46900	14.90	56800	5.00	52800	21.25	46600	4.60	48900	16.20	37800	3.90
	LM048-1AH	Part	12	46900	14.25	56800	4.80	52800	21.15	46600	4.40	48900	16.20	37800	3.70
	LM048-1AV	Full	12	35600	18.20	40400	5.50	39400	29.80	34200	4.70	38400	24.25	30200	4.20
	LM048-1AH	Part	12	35600	16.55	40400	5.40	39400	27.85	34200	4.60	38400	23.80	30200	4.10
LM060-1CS	LM060-1AV	Full	15	56100	14.10	74500	5.00	64500	20.50	60500	4.40	58900	16.10	49000	3.80
	LM060-1AH	Part	15	56100	14.45	74500	4.80	64500	20.50	60500	4.30	58900	16.25	49000	3.65
	LM060-1AV	Full	15	42800	16.00	54500	5.70	49600	27.00	44200	4.70	47900	23.30	39400	4.20
	LM060-1AH	Part	15	42800	16.35	54500	5.60	49600	27.10	44200	4.50	47900	23.15	39400	3.95

LM Split AH/AV Air Handler Physical Data					
Description	Unit	LM024	LM036	LM048	LM060
<b>ECM Const AirFlow -EON Fan Motor &amp; Blower</b>					
Fan Motor Type/Speeds	—	ECM Const Air Flow	ECM Const Air Flow	ECM Const Air Flow	ECM Const Air Flow
Fan Motor	HP	0.33	0.50	0.75	1.00
Blower Wheel Size (Dia. x W)	Inch	9 X 7	9 X 7	10 X 8	11 X 9
<b>Vertical Cabinet (AV)</b>					
Air Coil Dimensions (H x W)	Inch	24 X 21	24 X 21	24 X 27	24 X 27
Nominal size of Standard Filter - 2" MERV8 (L x H)	Inch	24 X 24 (1)	24 X 24 (1)	24 X 30 (1)	24 X 30 (1)
Weight - Operating (lbs)*	lbs	124	143	180	207
Weight - Shipping (lbs)*	lbs	152	175	220	253
<b>Horizontal Cabinet (AH)</b>					
Air Coil Dimensions (H x W)	Inch	18 X 28	18 X 28	20 X 32.5	20 X 32.5
Nominal size of Standard Filter - 2" MERV8 (L x H)	Inch	20 X 30 (1)	20 X 30(1)	20 X 34 1/2 (1)	20 X 34 1/2 (1)
Weight - Operating (lbs)*	lbs	124	143	180	207
Weight - Shipping (lbs)*	lbs	152	175	220	253

\* This data reflects standard unit weights only. Additional options may cause differences in listed weights.

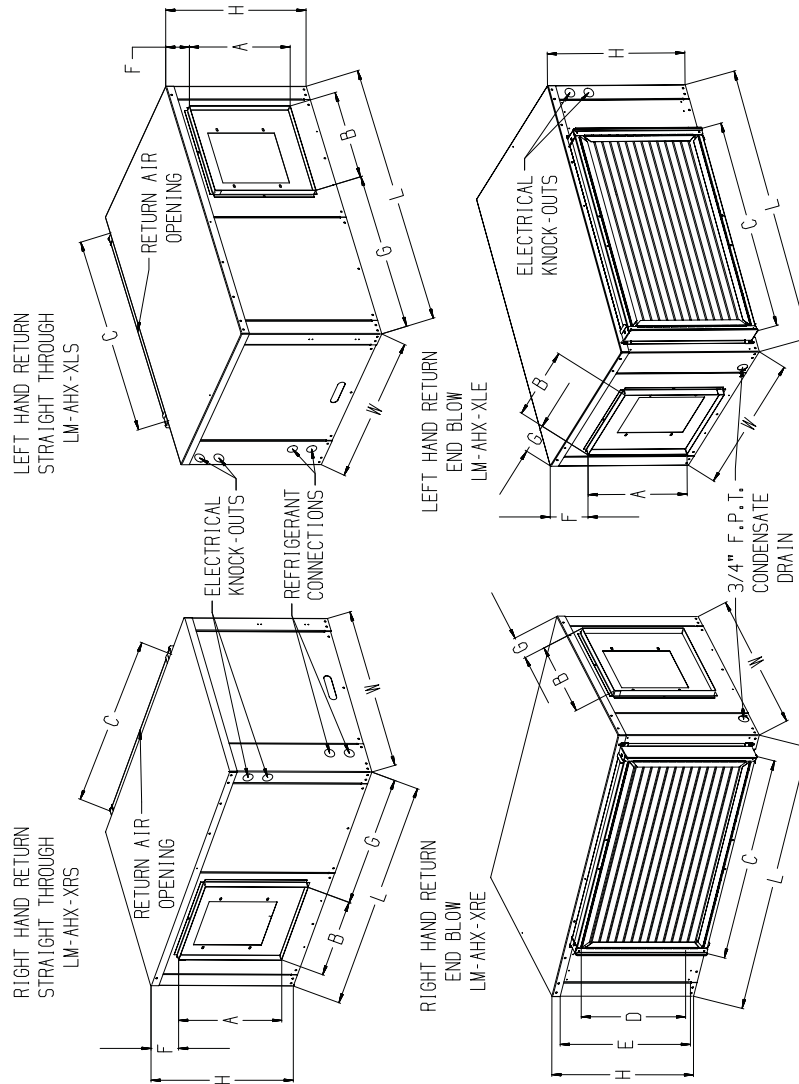
Air Handler Electrical Data									
Models	Blower motor	Voltage Code	Voltage/Phase/Hz	Voltage Min/Max	Total Unit				
					QTY	Motor FLA (A)	Min Circuit Amps	MOP Calculation	Max Fuse/HACR
LM024	8733805680	1	208-230/60/1	197/253	1	2.8	3.5	6.3	15
LM036	8733805681	1	208-230/60/1	197/253	1	4.3	5.4	9.7	15
LM048	8733805682	1	208-230/60/1	197/253	1	6.8	8.5	15.3	15
LM060	8733805683	1	208-230/60/1	197/253	1	9.1	11.4	20.5	20

# LM Split AV/AH Model Series - Air Handler Commercial Water Source Heat Pumps



## Air Handler Horizontal Dimensions and Connections

MODEL	L LENGTH	W WIDTH	H HEIGHT	A S/A DUCT HEIGHT	B S/A DUCT WIDTH	C R/A DUCT FLG WIDTH	D R/A DUCT FLG HEIGHT	E FILTER RACK HEIGHT	LEFT HAND RETURN END BLOW (XLE)	RIGHT HAND RETURN END BLOW (XRE)	LEFT HAND RETURN STRAIGHT THROUGH (XLS)	RIGHT HAND RETURN STRAIGHT THROUGH (XRS)	RECOMMENDED REPLACEMENT NOMINAL FILTER SIZE
									F	G	F	G	
LM024	33.00	26.00	21.75	15.75	13.75	30.00	16.00	18.00	1.25	4.13	1.38	10.63	20 X 30 X 2
LM036	33.00	26.00	21.75	15.75	13.75	30.00	16.00	18.00	1.25	4.13	1.38	10.63	20 X 30 X 2
LM048	38.50	30.00	21.75	15.75	15.75	33.50	18.50	20.50	2.63	4.00	2.63	11.38	20 X 34.5 X 2
LM060	38.50	30.00	21.75	17.75	17.75	33.50	18.50	20.50	1.50	4.13	1.75	10.38	20 X 34.5 X 2



NOTES  
 \* ALL DIMENSIONS WITHIN 1/2" 0.125"  
 \* ALL DIMENSIONS ARE IN INCHES  
 \* SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

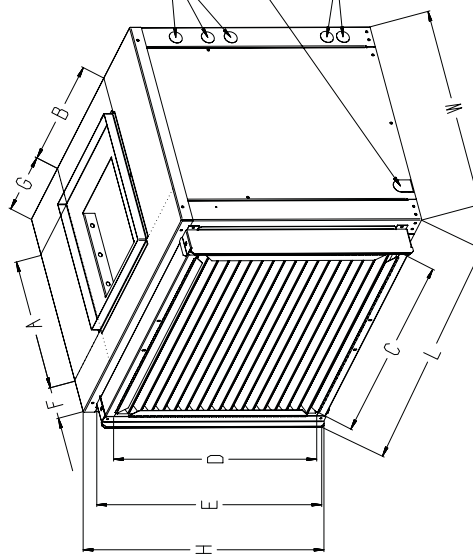
LM HZ AIR HANDLING SECTION



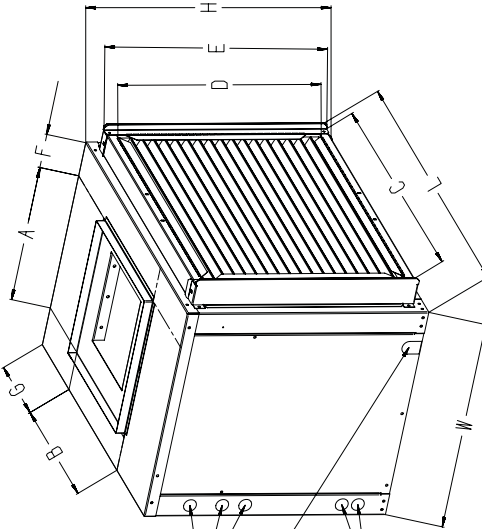
Air Handler Vertical Dimensions and Connections

Model	L	W	H	C	D	E	A	B	G	F	F	RECOMMENDED REPLACEMENT NOMINAL FILTER SIZE
	LENGTH	WIDTH	HEIGHT	R/A DUCT FLANGE WIDTH	R/A DUCT FLANGE HEIGHT	FILTER RACK HEIGHT	TOP BLOW UNITS S/A DUCT COLLAR					
LM024	26.00	21.50	25.75	22.00	22.25	24.00	15.75	13.75	6.13	XLT	XRT	24 X 24 X 2
LM036	26.00	21.50	25.75	22.00	22.25	24.00	15.75	13.75	6.13	5.25	4.00	24 X 24 X 2
LM048	32.75	24.00	25.75	28.50	22.25	24.00	15.75	15.75	8.38	5.50	3.50	24 X 30 X 2
LM060	33.25	26.00	27.75	28.50	22.25	24.00	17.75	17.75	8.37	6.25	4.00	24 X 30 X 2

LEFT HAND RETURN  
TOP BLOW  
LM-AVX-XLT



RIGHT HAND RETURN  
TOP BLOW  
LM-AVX-XRT



NOTES  
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LM VT AIR HANDLING SECTION

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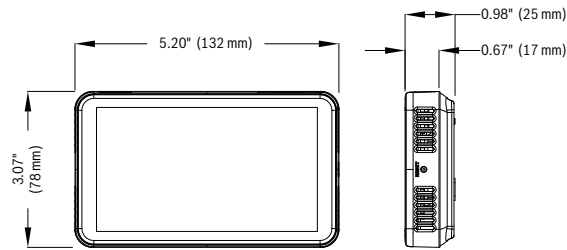
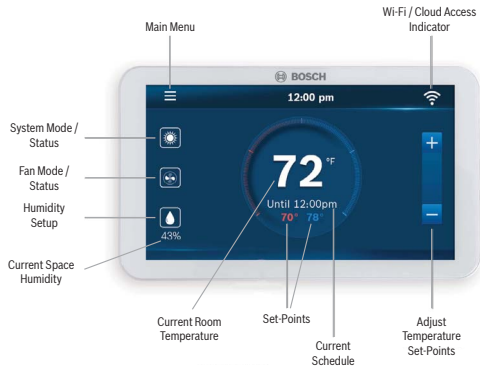
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Blower Performance Data - ECM Const CFM Motor - Eon															
Models	Fan Speed	Rated Airflow	Adjust	Tap	External Static Pressure (Inches of W.C.)										
					0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	
LM024 Part Load	Hi	600	+	A	600	600	600	600	600	600	600	600	600	-	-
	Med	500	Normal	A	500	500	500	500	500	500	500	500	500	-	-
	Low	425	-	A	425	425	425	425	425	425	425	425	425	-	-
LM024 Full Load	Hi	900	+	A	900	900	900	900	900	900	900	900	900	-	-
	Med	750	Normal	A	750	750	750	750	750	750	750	750	750	-	-
	Low	650	-	A	650	650	650	650	650	650	650	650	650	-	-
LM036 Part Load	Hi	1200	+	A	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
	Med	1050	Normal	A	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050
	Low	900	-	A	900	900	900	900	900	900	900	900	900	900	900
LM036 Full Load	Hi	1400	+	A	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
	Med	1225	Normal	A	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225
	Low	1050	-	A	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050
LM048 Part Load	Hi	1100	+	B	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
	Med	925	Normal	B	925	925	925	925	925	925	925	925	925	925	925
	Low	800	-	B	800	800	800	800	800	800	800	800	800	800	800
LM048 Full Load	Hi	1700	+	B	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
	Med	1500	Normal	B	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
	Low	1275	-	B	1275	1275	1275	1275	1275	1275	1275	1275	1275	1275	1275
LM060 Part Load	Hi	1725	+	A	1725	1725	1725	1725	1725	1725	1725	1725	1725	1725	1725
	Med	1500	Normal	A	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
	Low	1275	-	A	1275	1275	1275	1275	1275	1275	1275	1275	1275	1275	1275
LM060 Full Load	Hi	2300	+	A	2300	2300	2300	2300	2300	2300	2300	2300	2300	2300	2300
	Med	2000	Normal	A	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
	Low	1700	-	A	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700

# LM Split AV/AH Model Series - Air Handler Commercial Water Source Heat Pumps



## Field Installed Accessory - Bosch Connected Control Wi-Fi Thermostat



Description	Part Number	Heat	Cool	Humidity
Bosch Connected Control (BCC100)	8733948 009	4	2	Yes

### Specifications

- 5 Inch Touch Screen 854 x 480 Pixels
- 7 Relay Outputs (Terminals) G, Y1, Y2, W1, W2, O/B, H/dH
- 1 Data Input (Pulse signals from Bosch WSHP)
- Displays Bosch Water Source Heat Pump Fault Messages
- Wi-Fi (802.11a/b/g/n) 2.4GHz (not compatible with 5GHz)
- FCC and IC Certification
- 5 Year Limited Warranty (see <https://www.bosch-thermotechnology.us/us/en/residential/service/product-warranty-library/> for details)

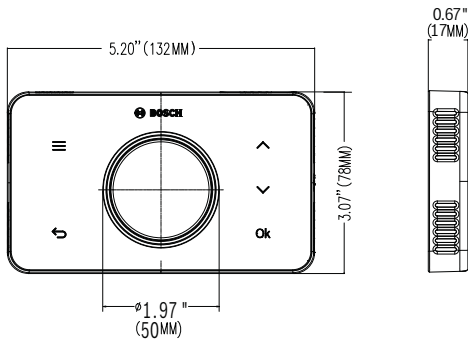
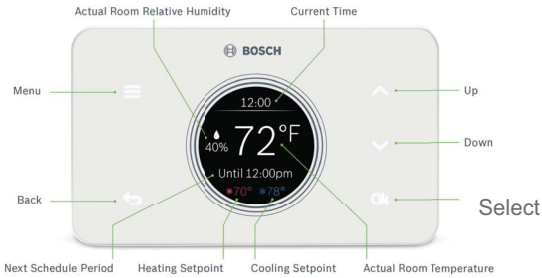
### Compatibility

- Conventional (Gas, Oil, Electric): Up to 2 Heat / 2 Cool
- Heat Pump (O/B to energize reversing valve in cool/heat): Up to 4 Heat / 2 Cool
- Supports up to 1 Accessory Unit: Humidifier or Dehumidifier (not provided by Bosch)
- Unit Modes: Heat, Cool, Auto, Off, Emergency Heat
- Fan Modes: Auto, On, Circulate
- Supports 2 Transformer Systems (Rh and Rc)
- C-Wire Required for Installation
- Supports Active and Passive Dehumidification without the need for external relays, such as Bosch Water Source Heat Pump products equipped with a Hot Gas Reheat Coil and/or ECM motor
- Supports dual fuel applications

# LM Split AV/AH Model Series - Air Handler Commercial Water Source Heat Pumps



## Field Installed Accessory - Bosch Connected Control Wi-Fi Thermostat



Description	Part Number	Heat	Cool	Humidity
Bosch Connected Control (BCC50)	8733952994	3	2	Yes

### Specifications

- 2.8 Inch Touch Screen 240 x 320 Pixels
- 5 Back-lit Touch Buttons
- 6 Relay Terminals: G, Y1, Y2, W/E/AUX, O/B/W2, H/DH
- Wi-Fi (802.11b/g/n) 2.4GHz
- FCC and IC Certification
- 3 Year Limited Warranty (see <https://www.bosch-thermotechnology.us/us/en/residential/service/product-warranty-library/> for details)

### Compatibility

- Conventional (Gas, Oil, Electric): Up to 2 Heat / 2 Cool
- Heat Pump (O/B/W2 to energize reversing valve in cool/heat): Up to 3 Heat / 2 Cool
- Supports up to 1 Accessory Unit: Humidifier or Dehumidifier (not provided by Bosch)
- Unit Modes: Heat, Cool, Auto, Em Heat (Heat Pump & Dual Fuel only), Off
- Fan Modes: Auto, On, Circulate
- Supports 2 Transformer Systems (Rh and Rc)
- C-Wire Required for Installation
- Supports Active and Passive Dehumidification without the need for external relays, such as Bosch Water Source Heat Pump products equipped with a Hot Gas Reheat Coil and/or ECM motor